

REMARKS

Claims 1-6, 8-13, 15-21 and 23 are pending in the application. No claims are currently in allowable form. Certain claims have been rejected under §112, second paragraph, for indefiniteness with amendments made to claims 1, 4, 5, 18, 21 and 23 to add clarity and overcome these rejections.

The Examiner is respectfully requested to reconsider the rejections in light of the claim amendments and following remarks.

Allowable Claims

Claims 4, 5 and 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 21 and 23 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Claims 21 and 23 have been amended to overcome the §112 rejection and should now be in condition for allowance. Claims 4, 5 and 8 have been amended to correct §112 issues identified by the Examiner and should be in condition for allowance given the amendments to their base claim and the remarks below distinguishing those claims from the prior art of record.

Claim Rejections – 35 U.S.C. § 112

Claims 1-6, 8-11, 18, 21 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 4, 5, 18, 21 and 23 have been amended to address these noted deficiencies.

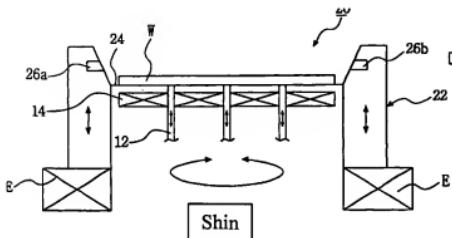
Claim Rejections – 35 U.S.C. § 103

Claims 12, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shin, et al. (previously of record) in view of Wu (U.S. 6,932,558).

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shin, et al. in view of Wu, as applied to claim 15 above, and further in view of Horr, et al. (previously of record).

A. Guide Block Vertical Movement (e.g., Shin) Is NOT Equivalent to Inward/Outward Movement (Claim 12)

In rejecting the claims, the Examiner states that the effect of moving Shin guide blocks with inwardly beveled surfaces is equivalent to moving guide blocks inwardly/outward (e.g. radially). This assertion is incorrect. Shin Fig. 3 is shown below.



- space shown between wafer W and guide block inclined edge
- vertically moveable guide blocks will never be able to retain (e.g., pinch) the wafers between them for perfect centering
- there is no guarantee that wafer will slide down inclined edge:

Shin really only teaches placing boundaries on the chuck plate (guide parts 22) so that the wafer will not “hang over the edge of the chuck plate (10)” [Shin, col. 1, line 67] during processing. The claimed invention’s advantages of radial movement of guide blocks verses the vertical movement of inclined blocks is shown with particularity in the current application’s FIGs 9A through 9C:

Fig. 9A



- FIG. 9A shows wafer W canted on beveled edge of guide block on left-hand side. There is no guarantee that wafer would “right itself” if both the left and right blocks were raised simultaneously.

Invention

Fig. 9B



- FIG. 9B shows that moving the guide blocks (300) radially outward allows the wafer W to slide off of the guide blocks.

Fig. 9C



- FIG. 9C shows that moving the guide blocks radially inwardly can accurately capture, level, and center the wafer between them. This capture is not possible with Shin.

***B. Replacing Vertically Moveable Guide Blocks (Shin) with Inward Roller Movement (Wu)
Unpermitted Use of Hindsight***

The substitution of the inwardly moving rollers shown in the Wu reference for the guide blocks of Shin is exactly the type of hindsight analysis that is not permitted by law. “Our case law makes clear that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.” (*quoting C.R. Bard, Inc. v. M3 Systems, Inc.*, 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232 (Fed. Cir. 1998)

First, it appears that placement of the inwardly moving rollers shown in the Wu reference would interfere with placement of the lift pins on the Shin susceptor. Second, one looking at the Shin reference would clearly see that the guide blocks form a boundary of the susceptor and are incapable of inward movement as they would collide with the susceptor boundary. With this knowledge, one would therefore not be motivated by Wu to install inwardly moving guide blocks. “The factual inquiry whether to combine references must be thorough and searching. . . . It must be based on objective evidence of record. This precedent has been reinforced in myriad decisions, and cannot be dispensed with.” (*In re Lee*, 277 F.3d 1338, 1343 61 USPQ2d 1430 (Fed. Cir. 2002)

Third, the combination of Shin and Wu do not teach or suggest the method steps cited in the claims. The pending claims describe a synergistic movement of the lift pins in cooperation with the guide blocks – namely, that the guide blocks move outward as the lift pins descend, and the guide blocks move inward as the lift pins drop below the level of the susceptor surface. This compares with the very different method proscribed by the Shin reference, where the guide blocks are raised while the lift pins are kept still until the guide blocks contact the wafer. Thereafter, both the guide blocks and the pins descend. The Wu reference method steps do not make up for this deficiency. Accordingly, rejection under §103(a) would be inappropriate.

As for the other claims:

CLAIM 13 – the Examiner ignores the remaining language of the method step, whereby “the guiding blocks move a predetermined distance when the lift pins are lowered below the outer surface of the susceptor.” The Wu reference does not trigger guide block movement with the lift pin movement; and Shin reference does not teach inward movement of the guide blocks.

CLAIM 17 – there is no disclosure within the prior art of record of taking in to account processing temperature when positioning the guiding blocks. Per MPEP 2144.03, the Examiner

is required to provide much greater detail when effecting what amounts to Official Notice of technical detail.

C. Neither Takeuchi nor Wu show "an attachment assembly extending through elongate openings formed in the guiding block and transfer rod" per claims 1 and 18

Claims 1-3, 9, 18 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi (U.S. 2003/0219333) in view of Wu.

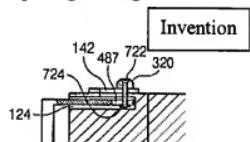
Claims 6, 11 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi in view of Wu, as applied to claims 1 and 18 above, and further in view of Shin, et al.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi in view of Wu, as applied to claim 9 above, and further in view of Horr, et al.

Independent claims 1 and 18 now include the limitation whereby the openings through which the attachment assembly extends between the guiding block and transfer rod is "elongate." An example of this structure and method for connection is shown in the section of Applicants' FIG. 3 shown to the right where bolt (722), secured with nut (724), passes up through the elongate openings (487/142) to secure the transfer rod to the guide block. The elongate openings yield advantages that are not disclosed in the prior art, namely that the elongate openings enable a combinable position between the guiding block (300) and the transfer rod (480) to be varied. [Specification, page 6, lines 28-29]

Takeuchi shows in FIG. 3A arch-shaped openings. But these openings are not formed in the guiding block—which the Examiner identifies as Takeuchi pawl (13)—or the transfer rod—which the Examiner identifies as Takauchi pawl 8. Wu shows in Figure 1 arch shaped slots (7). But, like Takeuchi, these slots are not formed in the guiding block—which the Examiner identifies as spinning belt (32)—or the transfer rod—which the Examiner identifies as cross piece (38). Instead, the Wu slots are formed in the wafer support surface (4).

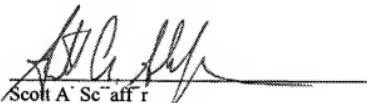
As the "elongate openings" limitation is not included within the prior art of record, and not suggested by that prior art, then allowance of the claims is mandated. Applicants therefore respectfully suggests that the §103(a) rejection has been overcome and should be removed.



For the foregoing reasons, reconsideration and allowance of claims 1-6, 8-13, 15-21 and 23 of the application as amended is requested. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

MARGER JOHNSON & McCOLLOM, P.C.



Scott A. Johnson
Reg. No. 38,610

MAUREEN HANSON & MCCOLLOM, P.C.
210 Second Street, Suite 400
Portland, OR 97202
503-222-3613

Customer No. 20575